

**AMENDMENTS TO THE CLAIMS**

1       1. (currently amended) A continuous renal replacement therapy device, adapted to  
2 ~~enable a patient to wear the whole device be worn on a portion of the body of a patient,~~  
3 comprising:

4               at least one dialyzer that utilizes a dialysate to remove impurities from the blood  
5 of the patient;

6               a microprocessor adapted to control a rate that excess fluid is removed from said  
7 dialysate while said at least one dialyzer is utilizing the at least one dialyzer to remove impurities  
8 from the blood; and

9               at least one dialysate sorbent device for regenerating the dialysate.

1       2. (currently amended) The continuous renal replacement therapy device of claim 1,  
2 wherein the at least one dialyzer is connected in series with at least one additional dialyzer.

1       3. (previously presented) The continuous renal replacement therapy device of claim  
2 1, wherein at least one of the dialyzers comprises a plurality of cylindrical hollow fibers,  
3 wherein the patient's blood is circulated within the hollow fibers in a first direction and wherein  
4 the dialysate is circulated around at least a portion of the exterior walls of the hollow fibers in a  
5 second direction.

1       4. (original) The continuous renal replacement therapy device of claim 3, wherein  
2 the exterior walls of the hollow fibers are semiporous so that impurities can be moved from the  
3 blood and into the dialysate.

1           5. (previously presented) The continuous renal replacement therapy device of claim  
2       1, wherein each of the at least one dialyzers have a flexible casing adapted to conform to the  
3       body contour of the patient.

1           6. (previously presented) The continuous renal replacement therapy device of claim  
2       1, wherein the number of dialyzers in the at least one dialyzer may be varied to reflect different  
3       dialysis prescriptions

1           7. (previously presented) The continuous renal replacement therapy device of claim  
2       1, further including a blood inlet tube leading into a first dialyzer of the at least one dialyzer and  
3       a blood outlet tube leading out of a last dialyzer of said at least one dialyzer such that the at least  
4       one dialyzers are connected in series.

1           8. (original) The continuous renal replacement therapy device of claim 7, wherein  
2       the blood inlet tube includes a side port for the infusion of anticoagulants into the blood.

1           9. (original) The continuous renal replacement therapy device of claim 8, wherein  
2       the anticoagulant is chosen from the group consisting of: heparin, prostacyclin, low molecular  
3       weight heparin, hirudin and sodium citrate.

1           10. (previously presented) The continuous renal replacement therapy device of claim  
2       7, wherein the blood outlet tube includes a side port adapted for an infusion of at least one  
3       additive.

1           11. (previously presented) The continuous renal replacement therapy device of claim  
2   10, wherein the at least one additive can be pumped into the blood by a plurality of additive  
3   pumps.

1           12. (previously presented) The continuous renal replacement therapy device of claim  
2   11, wherein the rate of infusion of said at least one additive is controlled electronically.

1           13. (currently amended) The continuous renal replacement therapy device of claim  
2   10, wherein said at least one additive is ~~are~~ chosen from the group consisting of: sodium citrate,  
3   calcium, potassium and sodium bicarbonate.

1           14. (previously presented) The continuous renal replacement therapy device of claim  
2   1, wherein the at least one sorbent device comprises a plurality of sorbent devices connected in  
3   series.

1           15. (previously presented) The continuous renal replacement therapy device of claim  
2   1, wherein the at least one sorbent device comprises a plurality of sorbent devices connected in  
3   parallel.

1           16. (currently amended) The continuous renal replacement therapy device of claim 1,  
2   wherein the at least one dialyzer is connected in parallel with at least one additional dialyzer.

1           17. (previously presented) The continuous renal replacement therapy device of claim  
2   1, wherein at least one of said at least one dialyzer comprises a plurality of parallel sheets of

3 semiporous material, wherein the patient's blood is circulated on one side of the parallel sheets  
4 in a first direction and wherein the dialysate is circulated on the other side of the parallel sheets  
5 in a second direction.

1           18. (currently amended) A continuous renal replacement therapy device, adapted to  
2 ~~enable a patient to wear the whole device be worn on a portion of the body of a patient,~~  
3 comprising:

4                 at least one dialyzer that utilizes ~~a~~ dialysate to remove impurities from the blood  
5 of the patient;

6                 a microprocessor adapted to control a rate that excess fluid is removed from  
7 dialysate while said at least one dialyzer is utilizing the dialysate to remove impurities from the  
8 blood; and

9                 a plurality of dialysate sorbent devices for regenerating the dialysate wherein a  
10 first sorbent device contains a first sorbent and a second sorbent device that contains a second  
11 sorbent; said first sorbent and said second sorbent being different compounds.

1           19. (previously presented) The continuous renal replacement therapy device of claim  
2 18, wherein the plurality of sorbent devices are connected at least in series.

1           20. (original) The continuous renal replacement therapy device of claim 18, wherein  
2 each of the sorbent devices has a flexible casing adapted to conform to the body contour of the  
3 patient.

1           21. (previously presented) The continuous renal replacement therapy device of claim  
2       18, wherein the number of sorbent devices may be varied to reflect different dialysis  
3       prescriptions.

1           22. (original) The continuous renal replacement therapy device of claim 18, further  
2       including a regenerated dialysate inlet tube leading into the at least one dialyzer and a spent  
3       dialysate outlet tube leading out of the at least one dialyzer.

1           23. (previously presented) The continuous renal replacement therapy device of claim  
2       22, wherein the regenerated dialysate inlet tube includes a side port for an infusion of at least one  
3       additive.

1           24. (previously presented) The continuous renal replacement therapy device of claim  
2       23, wherein the at least one additive is pumped into the dialysate from a plurality of additive  
3       reservoirs.

1           25. (previously presented) The continuous renal replacement therapy device of claim  
2       24, wherein the rate of infusion of each one of the at least one additive is controlled  
3       electronically.

1           26. (previously presented) The continuous renal replacement therapy device of claim  
2       23, wherein the at least one additive is chosen from the group consisting of: sodium citrate,  
3       calcium, potassium and sodium bicarbonate.

1           27. (original) The continuous renal replacement therapy device of claim 22, wherein  
2       the spent dialysate tube leads into the plurality of sorbent devices and the regenerated dialysate  
3       tube leads out of the plurality of sorbent devices.

1           28. (previously presented) The continuous renal replacement therapy device of claim  
2       19, wherein the series of sorbent devices comprises a series of replaceable cartridges.

1           29. (previously presented) The continuous renal replacement therapy device of claim  
2       28, wherein the replaceable cartridges include at least one of: activated charcoal, urease,  
3       zirconium phosphate, hydrous zirconium oxide and activated carbon.

1           30. (previously presented) The continuous renal replacement therapy device of claim  
2       18, wherein the at least one sorbent device comprises a plurality of sorbent devices connected in  
3       parallel.

1           31. (previously presented) The continuous renal replacement therapy device of claim  
2       18, wherein the at least one dialyzer comprises a plurality of dialyzers connected in parallel.

1           32. (previously presented) The continuous renal replacement therapy device of claim  
2       18, wherein the at least one dialyzer comprises a plurality of dialyzers connected in series.

1           33. (previously presented) The continuous renal replacement therapy device of claim  
2       32, wherein at least one of the at least one dialyzer comprises a plurality of parallel sheets of  
3       semiporous material, wherein the patient's blood is circulated on one side of the parallel sheets

- 4      in a first direction and wherein the dialysate is circulated on the other side of the parallel sheets
- 5      in a second direction.